IN THE CLAIMS:

1 | 1. (CURRENTLY AMENDED) A method for selecting a coprocessor from a plurality

2 of coprocessors to process a packet, the method comprising the steps of:

3 | determining ~~the~~ a size of the packet;

4 | determining a cost associated with the packet in response to the ~~of that~~ size of the

5 | packet, the cost representing a load associated with processing the packet;

6 | determining an anticipated load for each coprocessor in the plurality of coproces-

7 sors using the cost; and

8 | selecting the coprocessor from the plurality of coprocessors based on the antici-

9 pated load.

1 2. (CURRENTLY AMENDED) The method of claim 1 wherein the step of determining

2 | a cost further comprises ~~ing~~ the step of:

3 calculating the cost using a rate associated with processing the packet.

1 3. (ORIGINAL) The method of claim 2 wherein the rate is stored in a lookup table.

1 4. (ORIGINAL) The method of claim 2 wherein the step of calculating the cost further

2 comprising the step of:

3 dividing the packet's size by the rate.

1 5. (CURRENTLY AMENDED) The method of claim 2 wherein the step of calculating

2 | the cost further comprises ~~ing~~ the step of:

2

3   multiplying the packet's size by a multiplicative inverse of the rate.

1   6. (CURRENTLY AMENDED) The method of claim 1 wherein the step of determining

2   a cost further comprises ~~ing~~ the step of:

3   applying the packet's size to a lookup table containing one or more cost values to

4   determine the cost.

1   7. (CURRENTLY AMENDED) The method of claim 1 wherein the step of determining

2   an anticipated load further comprises ~~ing~~ the step of:

3   adding the cost to a cumulative load associated with each coprocessor in the plu-

4   rality of coprocessors.

1   8. (CURRENTLY AMENDED) The method of claim 1 wherein the step of selecting the

2   coprocessor further comprises ~~ing~~ the step of:

3   selecting the coprocessor from a group of one or more coprocessors whose antici-

4   pated load is a minimum load.

1   9. (ORIGINAL) The method of claim 8 wherein the coprocessor is selected using a

2   scheduling algorithm.

1   10. (CURRENTLY AMENDED) The method of claim 1 wherein the step of selecting

2   the coprocessor further comprises ~~ing~~ the step of:

3   determining if a port associated with the packet is congested.

1   11. (CURRENTLY AMENDED) The method of claim 10 wherein the step of selecting

2   the coprocessor further comprises ~~ing~~ the step of:

3   selecting the coprocessor from a group of one or more coprocessors whose antici-

4   pated load is not a minimum load.

1   12. (CURRENTLY AMENDED) The method of claim 10 wherein the step of selecting

2   the coprocessor further comprises ~~ing~~ the step of:

3   selecting the coprocessor from a group of one or more coprocessors whose antici-

4   pated load is a minimum load.

1   13. (ORIGINAL) The method of claim 1 further comprising the step of:

2   incrementing a cumulative load associated with the selected coprocessor.

1   14. (CURRENTLY AMENDED) The method of claim 13 wherein the step of incre-

2   menting a cumulative load further comprises ~~ing~~ the step of:

3   adding the cost to the cumulative load.

1   15. (ORIGINAL) The method of claim 1 further comprising the step of:

2   decrementing a cumulative load associated with the selected coprocessor.

1   16. (CURRENTLY AMENDED) The method of claim 15 wherein the step of decre-

2   menting a cumulative load further comprises ~~ing~~ the steps of:

3   subtracting the cost from the cumulative load.

1   17. (CURRENTLY AMENDED) An apparatus for selecting a coprocessor from a plu-

2   rality of coprocessors to process a packet, the apparatus comprising:

3   a memory containing one or more software routines, including a software routine

4   configured to determine ~~the~~ a size of the packet, and to determine a cost associated with

5   the packet in response to the ~~of that~~ size of the packet, the cost representing a load associ-

6   ated with processing the packet; and

7   a processor configured to execute the software routines to determine an antici-

8   pated load for each coprocessor in the plurality of coprocessors using the cost and to se-

9   lect the coprocessor from the plurality of coprocessors based on the anticipated load.

1   18. (ORIGINAL) The apparatus of claim 17 further comprising:

2   a data structure;

3   wherein the cost is determined using information contained in the data structure.

1   19. (ORIGINAL) The apparatus of claim 18 wherein the information contained in the

2   data structure includes the cost.

1   20. (ORIGINAL) The apparatus of claim 18 wherein the information contained in the

2   data structure includes a rate the coprocessor can process the packet.

1   21. (CURRENTLY AMENDED) An intermediate device configured to select a coproc-

2   essor from a plurality of coprocessors to process a packet, the intermediate device com-

3   prising:

4   means for determining ~~the~~ a size of the packet, <u>and for determining</u> a cost associ-

5   ated with the packet <u>in response to the</u> ~~of that~~ size <u>of the packet</u>, the cost representing a

6   load associated with processing the packet;

7   means for determining an anticipated load for each coprocessor in the plurality of

8   coprocessors using the cost; and

9   means for selecting the coprocessor based on the anticipated load.

1   22. (CURRENTLY AMENDED) A computer readable media comprising~~:~~

2   ~~the computer readable media containing~~ computer executable instructions for execution

3   in a processor ~~for the practice of a method~~ for selecting a coprocessor from a plurality

4   of coprocessors to process a packet, the <u>instructions for</u>~~method comprising the steps of~~:

5   determining ~~the~~ a size of the packet, <u>and determining</u> a cost associated with the

6   packet <u>in response to the</u> ~~of that~~ size <u>of the packet</u>, the cost representing a load associated

7   with processing the packet;

8   determining an anticipated load for each coprocessor in the plurality of coproces-

9   sors using the cost; and

10   selecting the coprocessor from the plurality of coprocessors based on the antici-

11   pated load.

1   23. (CURRENTLY AMENDED) A method for selecting a processor for processing a

2   packet, the method comprising the steps of:

3   determining ~~the~~ a size of the packet;

4   determining a cost associated with the packet of that size, the cost representing a

5   load associated with processing the packet;

6   determining an anticipated load for the processor using the cost of the packet if

7   processed by the processor;; and

8   selecting the processor based on the anticipated load.

1   24. (CURRENTLY AMENDED) The method of claim 23 wherein the step of determin-

2   ing a cost; comprises:

3   the step of calculating the cost using a rate associated with the processing of the

4   packet; and

5   wherein the rate is stored in a lookup table.

1   25. (CURRENTLY AMENDED) The method of claim 23 wherein the step of determin-

2   ing a cost further comprises the step of:

3   applying the size of the packet to a lookup table containing cost values for deter-

4   mining costassociated with particular sizes.

1   26. (NEW) A method for selecting a coprocessor from a plurality of coprocessors to

2   perform a processing operation on a received packet, the method comprising steps of:

3   determining a cumulative load for each coprocessor, the cumulative load repre-

4   senting load due to packets currently awaiting processing at that coprocessor;

5   determining a size of the received packet;

6   determining a cost for processing the received packet at each coprocessor, the cost

7   determined, at least in part, in response to the size of the received packet and a processing

8   rate of that coprocessor;

9   combining the cumulative load and the cost at each coprocessor, to create an an-

10 ticipated load for each coprocessor;

11   comparing the anticipated loads of all the coprocessors; and

12   selecting, in response to the comparing, a particular coprocessor of the plurality of

13 coprocessors to perform the processing operation on the received packet.

1   27. (NEW) The method of claim 26, wherein the step of selecting further comprises the

2   step of:

3   selecting a coprocessor with minimum anticipated load to perform the processing

4   operation on the received packet.

1   28. (NEW) The method of claim 26, further comprising the step of:

2   determining if congestion is present at an output port associated with the received

3   packet, and if congestion is present, selecting a coprocessor with non-minimum antici-

4   pated load to perform the processing operation on the received packet.

1   29. (NEW) The method of claim 26, wherein the step of determining a cumulative load

2   for each coprocessor further comprises the step of:

3   determining, for each coprocessor, sizes of the packets currently awaiting proc-

4   essing at that coprocessor and using the sizes in conjunction with the processing rate of

5   that coprocessor to determine the cumulative load.

1   30. (NEW) The method of claim 26 wherein the processing operation is an encryption

2   operation.

1   31. (NEW) An apparatus to select a coprocessor from a plurality of coprocessors to per-

2   form a processing operation on a received packet, the apparatus comprising:

3   a plurality of queues configured to store packets currently awaiting processing,

4   each queue associated with one of the coprocessors, each queue associated with a cumu-

5   lative load that represents a load to process packets in that queue;

6   a data structure configured to store processing rates, each processing rate associ-

7   ated with one of the coprocessors; and

8   a processor configured to determine a size of the received packet, and in response

9   to the size of the received packet, and the processing rate of each coprocessor, determine

10   a cost to perform a processing operation on the received packet at each coprocessor, the

11   processor further configured to combine the cost at each coprocessor with the cumulative

12   load at that coprocessor to create an anticipated load at each coprocessor, and to select a

13   particular coprocessor to perform the processing operation on the received packet in re-

14   sponse to comparison of the anticipated load at each coprocessor.

1   32. (NEW) The apparatus of claim 31, wherein the processor is further configured to

2   select a coprocessor with minimum anticipated load to perform the processing operation

3   on the received packet.

1   33. (NEW) The apparatus of claim 31, wherein the processor is further configured to

2   determine if congestion is present at an output port associated with the received packet,

3   and if congestion is present, select a coprocessor with non-minimum anticipated load to

4   perform the processing operation on the received packet.

1   34. (NEW) The apparatus of claim 31, wherein the cumulative load associated with each

2   coprocessor is determined in response to sizes of packets awaiting processing in the

3   queue associated with that coprocessor and the processing rate of that coprocessor.

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1   35. (NEW) The apparatus of claim 31, wherein the processing operation is an encryp-

2   tion operation.